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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,192	07/24/2001	Mukta G. Farooq	FIS920010111US1	5681

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EXAMINER
EDMONDSON, LYNNE RENEE

ART UNIT	PAPER NUMBER
1725	3

DATE MAILED: 08/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

MK-3

Office Action Summary	Application No.	Applicant(s)	
	09/912,192	FAROOQ ET AL.	
	Examiner	Art Unit	
	Lynne Edmondson	1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 July 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-13 and 15* is/are rejected.

7)☒ Claim(s) *7 and 14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 July 2001* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4, 8, 11 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Spigarelli et al. (USPN 5220147).

Spigarelli teaches a method and apparatus for separating soldered components from a board (col 1 lines 11-23) wherein the assembly is held and the solder has a thickness, a cutting blade having a thickness less than the thickness of the solder is heated, forced against the connection and advanced thus severing the connection. This process is repeated as necessary (col 3 lines 3-25). The component removed by this process can be any component and the component assembly can be separated by any other means and still maintain the same structure. See also Spigarelli claims 1 and 5-7.

3. Claims 1, 4-6, 8, 11-13 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Bryant et al. (USPN 5938882).

Bryant teaches a method and apparatus for separating soldered (epoxied) components from a board with a soldering tool (col 1 lines 14-20 and lines 36-45) wherein the assembly is held and the solder has a thickness, a cutting blade edge

having a thickness less than the thickness of the solder (figures 3 and 4) is heated, forced against the connection and advanced thus severing the connection. This process is repeated as necessary (col 2 lines 5-38, col 3 lines 25-30 and col 4 lines 21-36). A vacuum is employed to remove the cut solder (epoxy) (col 5 lines 15-60). As the device is hand held it can move in any direction relative to the solder. The component removed by this process can be any component and the component assembly can be separated by any other means and still maintain the same structure for reuse (col 5 line 61 – col 6 line 2). See also Bryant claims 1-3.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2, 3, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bryant et al. (USPN 5938882) in view of Muramatsu et al. (USPN 5427641).

Bryant teaches a method and apparatus for separating soldered (epoxied) components from a board with a soldering tool (col 1 lines 14-20 and lines 36-45) wherein the assembly is held and the solder has a thickness, a cutting blade edge having a thickness less than the thickness of the solder (figures 3 and 4) is heated, forced against the connection and advanced thus severing the connection. This

process is repeated as necessary (col 2 lines 5-38, col 3 lines 25-30 and col 4 lines 21-36). A vacuum is employed to remove the cut solder (epoxy) (col 5 lines 15-60). The component removed by this process can be any component and the component assembly can be separated by any other means and still maintain the same structure for reuse (col 5 line 61 – col 6 line 2). However, there is no disclosure of a wire cutting element.

Muramatsu teaches a wire cutting means (7) for the removal of electronic components from a substrate (col 3 lines 30-45 and col 6 lines 44-68) such that they can be used (bonded) later (claim 9). See also Muramatsu claims 2, 3 and 9.

It would have been obvious to one of ordinary skill in the art at the time of the invention that fine cutting wires are known alternatives to cutting blades which would facilitate non-destructive removal of components (Bryant, col 1 lines 21-26) without damaging neighboring components or creating excess debris in a cost-effective manner (Bryant, col 1 lines 36-59).

Allowable Subject Matter

5. Claims 7 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Removal of soldered components with heated cutting elements is well known in

the art. See Bryant (USPN 5938882) and Muramatsu (USPN 5427641). However these cutting elements are typically wires or blades. There is no disclosure of a solder cutting element comprising a heated water jet. Although water jets are well known cutting tools they are not generally used for soldering or electronics processing as they tend to generate a lot of debris in the cutting process. The closest prior art teaching a water jet does not use the water for cutting but rather for cleaning the area after the solder is removed with a blade (Guslits USPN 4606492).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hyun (USPN 4896019), Hembree (USPN 6267650 B1, thin desoldering blade), Oglesby et al. (USPN 4785793, thin desoldering blade), Michel (USPN3903581, thin blade, vacuum) and Waller et al. (USPN 5229575).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynne Edmondson whose telephone number is (703) 306-5699. The examiner can normally be reached on M-F from 7-4 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (703) 308-3318. The fax phone numbers for

the organization where this application or proceeding is assigned are (703) 305-7118 for regular communications and (703) 305-7115 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.

Lynne Edmondson
Examiner
Art Unit 1725

Lynne Edmondson 8/14/02

LRE
August 15, 2002